Assignment #: 2   **Marks:** 20   **Due Date:** April 28th, 2024

You are being provided an excel sheet, first column of which is the list of students whose exam is expected next month. The second column represents list of the subjects in which that student is registered. From this data, you are to come up with an exam schedule comprising of minimum possible numbers.

For achieving this, you have to first come up with list of distinct subjects, which will be your set of nodes. Then you have to make an edge of weight 1 between two nodes if there is one student that has registered in both of the subjects. If there is another student, you can add 1 to the weight of the edge, and so on. When you are done, the weight of each of edge will be representing the number of shared students among both the subjects.

Next, you have to color this graph. As mentioned, the chromatic number of this graph must be 12 or less, as we only have 12 days to conduct the final exam. If, let's say, you are unable to achieve doing this, and your chromatic number is 13 or 14, you have to check if you could move a subject with minimum number of clashes to another slot, and then solve the clash.

Your Answer must include the following:

1. The resultant graph – Visual form, with the width of edge representing its weight.
2. Total number of nodes in resultant graph
3. Total Number of edges in the graph
4. Chromatic Number (Minimum pssoble)
5. Implementation code